

### REMARKS

Reconsideration of the above-identified application, as amended, is respectfully requested.

In the Official Action dated March 11, 2004, the Examiner rejected Claims 1-2, 4, 10-11, 13, 19-20, 22 and 25-30 under 35 U.S.C. §103(a) as allegedly being unpatentable over Chundi et al. (U.S. Patent No. 6,502,091) ("Chundi") in view of Gee et al., (U.S. Patent No. 5,459,636) ("Gee"). The Examiner further objected to Claims 5-9, 14-18 and 23-24 as being dependent upon a rejected base claim, but indicated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to the rejection of independent Claims 1, 10 and 19, Applicants respectfully disagree in view of the amendments and arguments in traversal herewith. Particularly, subject matter indicated as allowable in each of Claims 5, 14 and 23 are being amended for incorporation in each of their respective independent base Claims 1, 10 and 19.

Thus, the present invention is generally directed to a classifier device (and method and program instructions executable by machine) for a customer self service system that performs resource search and selection, the system including a context attribute database comprising types of user contexts and one or more context attributes associated with each user context for processing by the system, and context attribute function database comprising functions for computing values for each context attribute, the classifier comprising a mechanism for receiving a user query and a context vector comprising data associating an interaction state with the user and including context that is a function of the user, processing

the query and context vector against data included in the context attribute database and context attribute function database for predicting a particular user context. Further, according to the invention, as now set forth in amended Claims 1, 10 and 19, the context classifier mechanism implements a supervised learning algorithm for predicting user contexts. As a result of this processing, the system predicts a particular user context and populates the user context vector with context parameters specifying for use in a subsequent resource search. Thus, there is provided the ability to relieve the user of the nonproductive work of describing their context and the ability to improve the search value by including criteria derived from both data and behaviors in the general population that may be unknown to the user.

The allowed subject matter now set forth in amended Claims 1, 10 and 19 is directed to the details of the supervised learning algorithm that includes steps of receiving historical user interaction data including data relating to past user queries entered into the system and associated user contexts for users, and learning how user context attribute values map to user context attribute functions for improving the context attribute functions, the classifier utilizing improved context attribute functions for predicting a particular user context and populating said user context vector with context parameters specifying a user interaction state for use in a subsequent resource search.

Thus, the use of supervised learning applied to a set of historical user interaction records enables the classification of context attributes that are relevant for that particular user of the system. As a result, the user context vector may be populated with context parameters specifying a user interaction state for use in a subsequent resource search.

After applying supervised learning, the search results become increasingly relevant and specific for mapping user queries to resources.

Thus, the customer self-service system of the invention uses a highly specialized and optimized combination of supervised and unsupervised logic along with both automated and semi-automated entry of learned results and is able to deliver higher value because contexts are used in a closed loop self improvement system; front end (entry) middle (search and display) and back end (results and user feedback) are integrated.

Clearly, the combination the Chundi and Gee (which teaches generally a mechanism for supervised learning) does not teach, nor suggest, such a system, method and computer program product for classifying user contexts in a customer self service system that performs resource search and selection as in the present invention.

It is respectfully submitted that Claims 1, 10 and 19 of the present invention, as now amended, are patentably distinct from the combined Chundi and Gee references, and the Examiner is respectfully requested to allow independent Claims 1, 10 and 19.

To track language now set forth in amended Claims 1, 10 and 19, respective Claims 4, 13 and 22 are being amended to set forth that the context attribute value functions database is updated with improved (context attribute) functions.

Further, subject matter remaining in amended Claims 5, 14 and 23, is directed to the use of data from user interaction records (e.g., from a user interaction database as set forth in Claim 5) that serves as a training set for the supervised learning algorithm to enable continuous improvement of said functions in said context attribute function database.

In view of the foregoing remarks herein, it is respectfully submitted that this application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance be issued. If the Examiner believes that a telephone conference with the Applicants' attorneys would be advantageous to the disposition of this case, the Examiner is requested to telephone the undersigned.

Respectfully submitted,



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